

## TELEPHONE BASED ACCESS TO INSTANT MESSAGING

### Field Of The Invention

The present invention relates to telephone based access to  
5 instant messaging and is particularly concerned with instant messaging  
in data networks.

### Background Of The Invention

The Internet in addition to providing e-mail and easy access  
10 to information world-wide has provided an increasingly popular form of  
communication known as "instant messaging". Instant messaging  
allows the exchange of messages with others currently logged onto  
the Internet. This is similar to the kind of messaging that used to be  
available to other types of network users, including mainframe  
15 computer users and LAN users, but due to the wide-spread use of the  
Internet, instant messaging on the Internet has a much broader reach  
than did previously available forms of instant messaging.  
Understandably, users are becoming attached to the immediacy and  
value of Internet instant messaging. Unfortunately instant messaging  
20 is only available when the user has an Internet connection.

Multi-media wireless telephones have been developed to  
increase a user's flexibility in accessing the Internet, however these  
wireless telephones may not work everywhere and have an associated  
expense in requiring additional equipment. There have also been  
25 increasing numbers of public Internet access terminals. However, as  
yet these are not universally available and have an associated cost per  
use.

Hence there is a need to provide an alternative form of access  
to data network instant messaging and particularly to Internet instant  
30 messaging.

### Summary Of The Invention

An object of the present invention is to provide an  
improved method and apparatus for accessing data networking instant  
35 messaging.

According to the present invention instant messaging can  
be accessed via a telephone.

An embodiment of the invention provides instant messaging access from any telephone in the world via a telephone messaging system. Alternatively, the present invention can be embodied independently as a stand-alone telephone service, for example provided by a telephone company, provided by an company network, or provided by a user's personal IVR service implemented on his PC.

According to an aspect of the present invention there is provided a voice (telephone) based client providing access into instant messaging.

An advantage of the present invention is providing access to data network instant messaging from a telephone.

#### Brief Description Of The Drawings

The present invention will be further understood from the following detailed description, with reference to the drawings in which:

Fig. 1 illustrates a communications system incorporating an embodiment of the present invention;

Fig. 2 illustrates the voice messaging system capable of providing voice access to Internet instant messaging of Fig. 1; and

Fig. 3 illustrates a data communications network including a second embodiment of the present invention.

#### Detailed Description

Referring to Fig. 1, there is illustrated a communications system incorporating an embodiment of the present invention. The communications system 10 includes a telephone network 12 including telephone user 14 and a data network 16, that may include the Internet, including a user PC 18 connected thereto. A messaging system 20 includes an interface 22 to the telephone network 12 and a network interface card 24 coupled to the data network 16. The telephone user 14 accesses the messaging system 20 via the telephone network 12. The messaging system includes typical functions such as speech recognition, interactive voice response (IVR), voice messaging and, in accordance with an embodiment of the present invention, voice access to instant messaging.

Referring to Fig. 2 there is illustrated the voice messaging system (VMS) capable of providing the voice access to Internet instant messaging of Fig. 1. The voice messaging system 20 is a collection of software components capable of using a desired hardware platform to produce desired applications for end users. The hardware platform is also used as the vehicle to interface with the external world via the public telephone network 12 and the data network and Internet 16.

At the higher level, the voice messaging system is divided into two logical entities: an applications layer 30 and a framework layer 32. The applications layer is responsible for providing end user applications. The applications layer addresses issues related to user interaction such as dealing with voice messages, multimedia messages, recognizing DTMF and voice commands.

The framework layer 32 is a collection of software components that integrate with base software components 34 to provide the needed functionality for building, supporting and operating applications.

The lowest level is the base. The base software components typically act as an intermediary between the higher level software components and a hardware platform, and are similar in function to the operating system in a general purpose computer. The base software hides from the higher level software components the hardware-dependent detail of the target platform. The base provides all the needed call processing functionality (e.g. telephony and signal processing) and computing functionality (e.g. operating system and networking software) to build and support its portfolio of applications.

The present embodiment of voice messaging system includes in telephone applications an instant messaging function 36 having a buddy list 38 and instant messaging protocol 40 similar to those used on PC-based instant messaging applications.

In operation, the voice messaging system instant messaging function accesses buddy list 38 and protocol 40. When a user logs into their voice messaging account via the phone, they can also request a list of their buddies who are logged in, or if desired, optionally the voice messaging system could provide the buddy list automatically at each login. The VMS 20 announces the names of the logged in members of the buddy list, using text-to-speech or pre-

recorded names for each buddy. The user then indicates, for example via a command accepted by the speech recognition function or via a DTMF command, that they wish to send an instant message to one of the logged in buddies. They then receive a record tone and record a  
 5 voice segment (delineated by either the '#' key or silence). This prompt would then be sent to the logged on buddy as a sound file (probably .wav) or as a text translation of the spoken voice (assuming the target buddy was on a PC). Alternatively, a user may select from a list of predetermined messages, either voice or text.

10 The target buddy could respond with either a text message (that would be read via TTS to the phone caller) or a sound clip in return. The instant messaging function 36 could optionally allow users to identify themselves at a particular telephone (fixed or wireless) for a period of time, and receive (and respond to) incoming  
 15 instant messages, via techniques used today for remote notification of voice messages. That is, the VMS 20 makes a call to a user upon receipt of an instant message, and after appropriate identity verification, plays an instant message, and allows the user to create and send a reply. The instant messaging function could also make use  
 20 of accessible displays in telephones, either for presenting buddy lists, or in presenting incoming instant messages.

If the reply arrives during the time the telephone user is logged onto the voice messaging system 20, the instant messaging function 36 notifies the telephone user of the reply to the instant  
 25 message. The VMS 20 gives the telephone user the option of hearing the message using text to speech, playing the message if it is a sound clip or viewing the message if the telephone user's telephone has a suitable display.

Referring to Fig. 3, there is illustrated a data  
 30 communications network including a second embodiment of the present invention. The data network 50 includes a network server 52 providing a gateway between voice over IP services and the IP data network 50. In this embodiment, both the telephone user 54 and the computer user 56 are connected via a data network such as the  
 35 Internet. The functions provided by the server are similar to those described herein above for the voice messaging system.

The present embodiments have been described as they could be implemented as a feature of a telephone messaging system such as Nortel Networks Corporations CallPilot (trademark of Nortel Networks Corporation) and as a server connected to a data network.

- 5 Alternatively, the present invention could be embodied independently as a stand-alone telephone service, provided by a telephone operating company, provided by a company intranet or private network, or provided by a user's personal IVR service implemented on his PC.

- 10 Numerous modifications, variations and adaptations may be made to the particular embodiments of the invention described above without departing from the scope of the invention that is defined in the claims.